

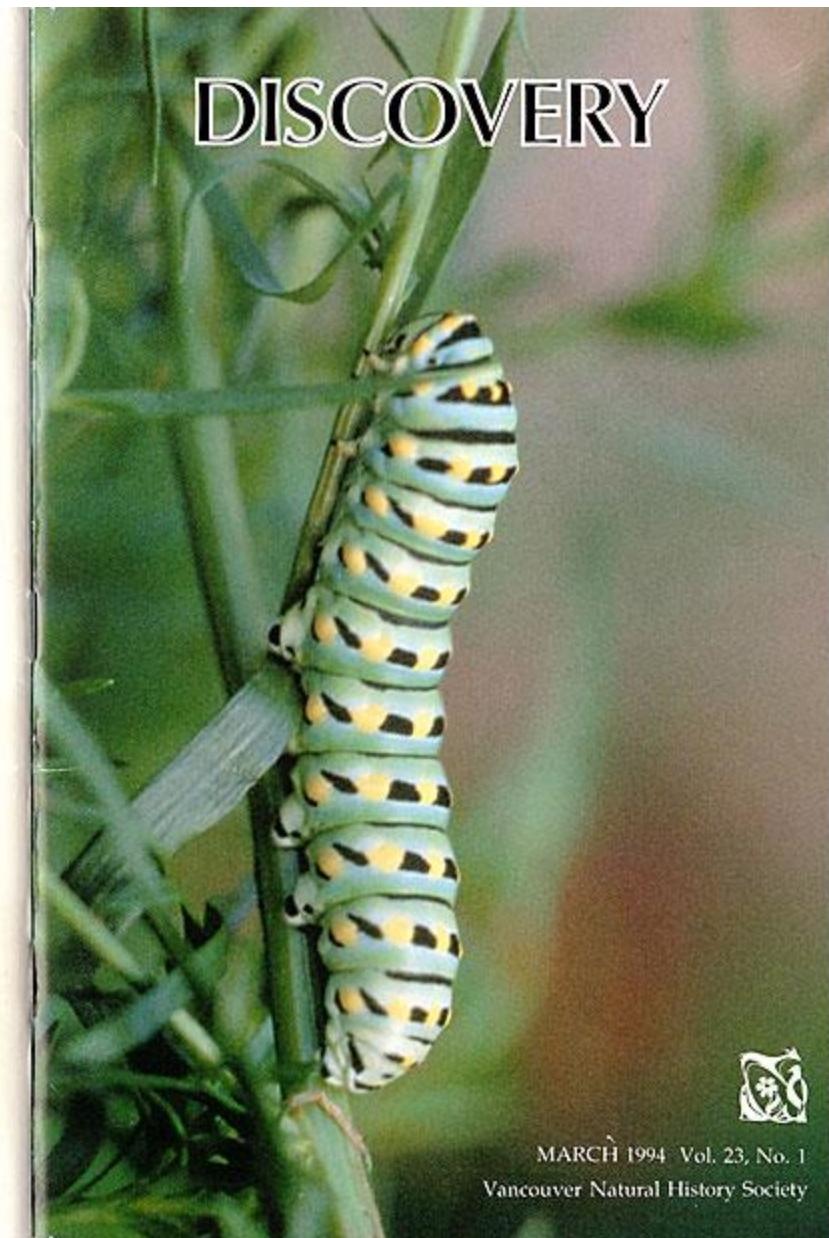
For captions, see page 7.



Publications Mail Registration No. 5911.
Please return unclaimed copies.
Return postage guaranteed.

DISCOVERY

Published quarterly by the Vancouver
Natural History Society as a service to members.
P.O. Box 3021, Vancouver, BC, V6B 3X5.



MARCH 1994 Vol. 23, No. 1

Vancouver Natural History Society

Full text from the article published in *Discovery*,
the journal of the Vancouver Natural History Society, Vol. 23, #1, March, 1994

Duck Hybrids and Variants in Greater Vancouver

by Stephen Arthur and Joyce Arthur
Photographs by Stephen X. Arthur. Copyright © 1994 SXA and JHA

The sight of an odd-looking duck that doesn't fit any picture in our field guides can be a source of frustration. While the solution of many experienced birders is to simply ignore these anomalies, trying to spot them and identify their ancestry can add a fascinating new perspective to bird watching. This article provides examples of local anomalies, including recent photographs by the authors. An overview of hybridization in ducks is given, as well as information to help identify escaped domestic ducks, crosses between domestic and wild ducks, and natural variants.

Hybridization in Ducks

Of all bird species, waterfowl are the most prone to hybridization, with over 400 hybrids documented. Most hybridizations have occurred in captivity, but wild hybrids are not infrequent. The Mallard (*Anas platyrhynchos*), which tends to hybridize more than any other duck, has hybridized with about 50 species of ducks and geese (Gray, 1958; Johnsgard, 1974). The Wood Duck comes in second, with hybridization records for about 26 other species. The Mallard's proclivity for hybridization stems from a number of factors -- it is abundant; it has many close relatives; and in city parks and sanctuaries it often suffers from an oversupply of males, who then consort with females of other species (Michael Price, personal communication). In the past, the most common wild hybrid in western North America has been between the Mallard and the Pintail (*Anas acuta*) (Figures 1 & 2), with rarer crosses occurring between the Mallard and the Wigeon, Shoveler, Cinnamon Teal, Green-winged Teal, and Gadwall (Johnsgard, 1974). All of these ducks have also been known to hybridize with species other than the Mallard. An increase in Eurasian wigeons over the last 20 years in western North America (Edgell, 1984) has made American/Eurasian wigeon crosses (Figure 3) possibly more common than Mallard/Pintail crosses in the Greater Vancouver area. Some Mallard hybrids cross genus lines but most of these occur in captivity, including crosses with the Merganser, Eider, Mandarin, Wood Duck, Redhead, Ring-necked Duck, Tufted Duck, Canvasback, and others, as well as several species of geese (Heintzelman, 1978; Johnsgard, 1965). However, wild hybrids are not as rare as may be thought. During the early 1970's, hybrid Mallard/American Black Ducks (*Anas rubripes*) in New England comprised between 8 and 13 percent of tagged Mallards and Black Ducks (Heusmann, 1974).

A surprising number of hybrid ducks are fertile, indicating that many duck species are closely related, and revealing interesting patterns of inheritance. Features from two hybridizing species tend to form a distinctive mosaic pattern, rather than being blended. In an experiment with fertile Mallard/Pintail hybrids, first generation males exhibited a common pattern of Mallard and Pintail characteristics, but the second generation produced a wide range of variants, including a few ducks that nearly reverted back to the original parent stock of both types, in appearance and behaviour (Johnsgard, 1965). A wild Mallard/Wigeon hybrid taken into captivity was more Mallard-like when in eclipse plumage and more Wigeon-like when in basic (Palmer, 1976). According to Johnsgard (1965), many hybrids exhibit new and unusual traits that are reminiscent of other species. For example, a facial crescent like that of the Blue-winged Teal often appears in Shoveler/Mallard hybrids. Such traits may either be the

result of new gene combinations or of reversion to an ancestral form. Curiously, many more male hybrids seem to occur than females, but the high number of males reported may be an artifact. Johnsgard (1974) says that males may be reported more frequently because sterile female duck hybrids often take on male plumage, and because female hybrids are overlooked due to the high degree of similarity between females of different duck species.

Many hybrid ducks have been reported over the years in the Greater Vancouver area. The following hybrids, all male, were sighted from December 1989 to November 1992, and were published in the local birding newsletter, *The Wandering Tattler* (Sept. 1990 to Mar. 1993 issues): 26 Eurasian/American Wigeons, 3 Mandarin/Wood Ducks (probably all the same bird), 2 Eurasian/American Green-winged Teals, 2 Mallard/Pintails, 1 Barrow's Goldeneye/Common Goldeneye, 1 Hooded Merganser/Goldeneye (probably Common), 1 Mallard/American Wigeon, and 1 Mallard/Gadwall. (Some of these may be duplicate sightings.) Figures 1 to 3 show hybrids we recently photographed.

Escaped Domestic Ducks, Domestic/Wild Crosses, and Natural Variants

It may be tempting to assign a hybrid status to strange ducks seen in city parks or sanctuaries, but it is more likely that anomalous ducks living near people are either escaped domestics, or crosses between wild ducks and domestics. Sometimes, non-native ornamental ducks escape from local waterfowl fanciers. This was a frequent problem at Surrey's Serpentine Fen a number of years ago, because a nearby waterfowl fancier kept unpinioned birds (Wayne Weber, personal communication). If a strange duck is not an escaped domestic or non-native ornamental, or a domestic/wild cross, the next most likely explanation is that it is a natural variant within the species. Individual variation (in which we include mutations) is described for waterfowl by Palmer (1976) and Madge and Burn (1988). It can include ducks, usually females, that are lighter-coloured overall (leucism) (Figure 7), ducks with dark to black plumage (melanism), and birds with partial albinism (extensive white areas in plumage), though true albinism is extremely rare. Mallard drakes may exhibit buffy plumage in areas normally darker (Figures 7 & 8), or they may show melanism with white neck or breast patches (Figures 4 & 9). Female Mallards may have much darker plumage and no apparent speculum. It is usually difficult, however, to distinguish individual variation from influences of hybridization or domestic duck crosses, so identification must remain tentative. The ducks in Figures 4 to 11 probably include examples of both domestic blood and natural variation, but the remainder of this discussion will focus on the more easily identifiable traits of domestic ducks.

Familiarity with the general characteristics of domestic ducks can help birders cope with identification of feral domestic ducks or domestic/wild crosses. All domestic ducks, with the exception of the Muscovy (*Cairina moschata*), are thought to be descended from the Mallard. The common domestic strains of Mallard raised in Greater Vancouver and the Fraser Valley currently include the Pekin, Rouen, Khaki Campbell, and Indian Runner, and there are also many minor and ornamental breeds. Domestication has resulted in several major changes from the wild Mallard that can serve as clues when identifying these ducks in the wild.

Domestic ducks are generally bulkier, with larger, rounder heads and shorter bills. Most have lost the ability to fly (except Muscovies) and, for the most part, to brood and nest. They have increased fertility and tend to be promiscuous rather than monogamous. Ducks bred for egg-laying tend to have longer bodies, and the legs of many domestic ducks are set farther back on the body, necessitating a more upright stance. Some domestic varieties look very unlike Mallards, such as the large, all-white Pekin and Aylesbury ducks. Pekins are the typical barnyard duck, while the less common Aylesbury is a very heavy-breasted bird. White domestic ducks have probably been bred directly from pure white Mallard mutants, which have been known to appear spontaneously in wild populations (Ives, 1947; British Agriculture, 1980). Other domestic ducks display only minor differences in form and plumage from the wild Mallard: the Rouen, except for being four times the weight of a Mallard, is nearly identical in appearance, and Grey Call ducks, an ornamental breed sometimes used as hunting decoys, closely resemble wild Mallards in size, plumage, and colouring, but have shorter bills and large, round heads. Finally, White Call ducks are shaped like the Grey but are pure white with bright orange bills (we observed one in Stanley Park, December 1992), while Khaki Campbells (Figure 10) and Indian Runners vary in plumage colour and are twice the weight of Mallards, but are slender and often feature unusually erect carriages with legs set well back from the centre of the body.

The ancestry of the Cayuga duck is controversial. The domestic Cayuga may have been bred from a natural variant of the Mallard (British Agriculture, 1980), or it may be a hybrid between the American Black Duck and a domestic Mallard strain (Ives, 1947). Feral Cayugas are particularly intriguing: according to Scott (1957), they may actually be a relatively common wild mutation. This possibility is supported by our observations of two such ducks (Figure 5), even though domestic Cayugas do not appear to be commonly raised in Greater Vancouver or the Fraser Valley. The Cayuga is Mallard-sized, with dark plumage, usually beetle-green. The pure domestic Cayuga is completely dark, but a motley white breast patch and some white on the wings are common irregularities, especially in feral Cayugas.

Domestic Muscovy ducks, which resemble geese more than ducks, vary considerably in colour, markings, and bill characteristics. Males feature red facial skin patches, or caruncles, and a crested head. Since wild Muscovies are native to tropical America, any Muscovy seen locally in the wild must be feral. A migrating pair of domestic Muscovies has lived in Stanley Park's Lost Lagoon for the last several springs. We observed another individual in Jericho Park during January and February of 1993.

If escaped domestic ducks interbreed with wild Mallards, characteristics of resulting intergrades (crosses between varieties within a species) can be unpredictable. For example, resulting female intergrades may be lighter-coloured overall (Figure 6), and male intergrades may be darker with white neck or breast patches (Figures 4 & 9) (Palmer, 1976). Mallards with domestic blood may also feature irregular markings such as white wing tips or broad white neck rings (Scott, 1957), or darker ventral plumage with a reduced dark breast patch (Palmer, 1976). These traits of intergrades may also appear as natural variations.

Conclusion

Hybridization between ducks in the wild is relatively rare, but does occur more often than is realized. Natural variants may also occur fairly frequently, but caution must be exercised when identifying ducks that depart from the pure type, especially those observed in city parks and sanctuaries, where ducks with domestic blood are more likely to be present.

BACK COVER PHOTOS (plus figures 10 and 11)

The following figure captions correspond to the [photos on the back cover](#) (top of page). All photos by Stephen X. Arthur. (Front cover photo by Lothar Kichner.)

Figure 1. Mallard/Pintail hybrid # 1 (Reifel Bird Sanctuary, Ladner, December 1992). This duck was closely associated with about 20 Mallards and the entire group dove, rather than dabbled. It was similar to a Pintail in its bill colour and head and neck shape, but had an intermediate neck length. It featured a variable head colour, partly iridescent green, partly dark brown; an incomplete, wide, T-shaped white collar (green nape); a medium brown breast grading to creamy belly and underparts; gray sides; gray-brown secondaries and wing coverts; gray primaries; a speculum greener than Mallard's; a two inch tail plume with upward curve; white and black tail feathers; a white rump; gray undertail coverts; and orange feet.

Figure 2. Mallard/Pintail hybrid # 2 (Stanley Park's Lost Lagoon, March 1993). This duck was associated loosely with Mallards and was similar to the one in Figure 1 except it had a slightly wider white collar with a more obvious upward arc, a thinner dark bill stripe, and a longer neck. A mangled white spot on its breast; missing white tail feathers, and a reduced black tail may have been due to mutilation.

Figure 3. Eurasian/American Wigeon (Jericho Park, March 1993). This duck was associated with American Wigeons and one Eurasian Wigeon. It exhibited a white stripe over the forehead and crown; a rust-coloured nape and hind neck; brown chin, throat, foreneck, and breast; gray collar; white wing patch; gray wing coverts and belly; white flank; and dark tail coverts.

Figure 4. "Bibbed" Mallard (Stanley Park's Lost Lagoon, December, 1992). This duck featured a white upper breast, chocolate brown underparts and lower breast, dark brown wings streaked with lighter brown, and no speculum. It may be a natural variant exhibiting partial albinism and melanism or a domestic/wild cross.

Figure 5. Probable Cayuga (Reifel Bird Sanctuary, March, 1993). This duck was mainly dark with a mix of brown, black, and green plumage, a white breast patch, black bill, some white on wing tips, reddish brown eyes, and a Mallard-like size and body shape. Earlier

(December, 1992), at the same location, we photographed a similar duck (not shown) that had dark beetle-green plumage with a larger white breast patch, orange-brown legs, black bill with some greenish-yellow on upper bill, and dark eyes. These ducks are probably either domestic Cayugas or naturally occurring Mallard variants exhibiting melanism and partial albinism.

Figure 6. Blonde Mallard female (Jericho Park, December, 1992). Two different individuals were seen. Both were an overall pale, creamy colour. They are probably natural variants exhibiting leucism or possibly descendants of a white domestic strain and wild Mallards.

Figure 7. Ringless Mallard (Jericho Park, December, 1992). This duck lacked a white collar and dark brown breast. It is probably a natural variant.

Figure 8. "Reversed" Mallard in Basic Plumage (Jericho Park, December, 1992). This duck exhibited a general reversal of colour patterns on the body and breast (medium brown at back, light gray at front), a distorted white patch on the foreneck, no collar, and black-orange feet. It is possibly a natural variant or a domestic/wild cross.

Figure 9. "Reversed" Mallard in Eclipse Plumage (Jericho Park, July, 1993). This is the same duck as in Figure 8, photographed seven months later. Except for the gray wing tips and relatively normal brown speckled breast, this duck has become a uniform dark brown. The head has traces of iridescent green but is mostly dark brown to black.



Figure 10. Probable Khaki Campbell (Stanley Park's Lost Lagoon, December 1992). This duck was closely associated with a small white duck (probably domestic White Call duck) and was loosely associated with Mallards. It dabbled and was semi-tame. It was larger than a Mallard and had a long body, with the legs in the last third of the body. Except for a seal brown head, neck, and rump, the plumage was an overall creamy beige. We have included this duck because it shows many characteristics in common with both Canvasbacks and Mallards, illustrating the possible confusion that can result from a sighting in the wild.



Figure 11. "Transvestite" Mallard (Stanley Park, January, 1993). Photographed in mid-winter, this appears to be a drake (yellow bill) suffering from an unusual arrested molt condition. However, any female duck with a boosted testosterone level will produce male plumage.

Acknowledgements

We would like to thank Michael Price, Wayne Weber, and Lynn Miller for their assistance and helpful tips.

References

- British Agriculture (Ministry of Agriculture, Fisheries and Food). 1980. *Ducks and Geese*. Her Majesty's Stationery Office, London.
- Edgell, M.C.R. 1984. Trans-hemispheric movements of Holarctic Anatidae: The Eurasian wigeon (*Anas penelope L.*) in North America. *Journal of Biogeography*. 11(1):27-39.
- Gray, Annie P. 1958. *Bird Hybrids: A Check-List with Bibliography*. Commonwealth Agricultural Bureaux, Farnham Royal Bucks, U.K.
- Heintzelman, Donald S. 1978. *North American Ducks, Geese, and Swans*. Winchester Press, New York.
- Heusmann, H.W. 1974. Mallard-Black Duck relationships in the northeast. In *Waterfowl Ecology and Management: Selected Readings*, 1982. Ratti, J.T., Flake, L.D., Wentz, W.A. (eds.) The Wildlife Society, Bethesda, MD. pp. 1249-1257.

- Ives, Paul. 1947. *Domestic Geese and Ducks*. Orange Judd Publishing Co., New York.
- Johnsgard, Paul A. 1965. *Handbook of Waterfowl Behaviour*. Cornell University Press, Ithaca, New York.
- , 1974. *Hybridization*. In Hyde, D.O. (ed.) *Raising Wild Ducks in Captivity*. E.P. Dutton & Co., New York. pp. 142-146.
- Lack, David. 1974. *Evolution Illustrated by Waterfowl*. Harper & Row, New York.
- Madge, S. and Burn, H. 1988. *Waterfowl: An Identification Guide to the Ducks, Geese and Swans of the World*. Houghton Mifflin, Boston.
- Palmer, Ralph S. (ed.) 1976. *Handbook of North American Birds*, Volume 2, Waterfowl (Part 1). Yale University Press, New Haven & London.
- Scott, Peter. 1957. *A Coloured Key to the Wildfowl of the World*. The Wildfowl Trust, Slimbridge, England.